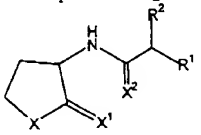
CLAIMS PENDING AFTER AMENDMENT

1. (Amended) A compound having the structure:



(I)

wherein,

R^1 is a member selected from —H, —OH, and (=O);

R^2 is a member selected from reactive functional groups, alkyl groups terminally substituted with a reactive functional group and internally substituted alkyl groups terminally substituted with a reactive functional group;

X is a member selected from —O—, —S— and—NH—; and

X^1 and X^2 are members independently selected from O and S.

2. The compound according to claim 1, wherein R^2 is an internally substituted alkyl group terminally substituted with a reactive functional group.

3. The compound according to claim 2, wherein the alkyl group is internally substituted with a functional group that is a member selected from —OH, (=O) and combinations thereof.

4. The compound according to claim 1, wherein the reactive functional group is a member selected from —OR^3, —NHR^4, —COR^5, —SH and —CH_2X^3

wherein,

—OR^3 is a member selected from hydroxy, alkyl sulfonate and aryl sulfonate groups;

R^4 is a member selected from H, C_1-C_6 alkyl, C_1-C_6 substituted alkyl, aryl and substituted aryl groups;

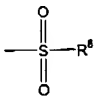
R^5 is a member selected from H, X^3 and —OR^6, wherein R^6 a member selected from alkyl, substituted alkyl, aryl, substituted aryl, heteroaryl,

substituted heteroaryl, heterocyclyl and substituted heterocyclyl groups; and

X^3 is a halogen.

5. The compound according to claim 1, wherein the compound is a single stereoisomer.

6. The compound according to claim 4, wherein R^3 is



(V)

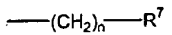
wherein,

R^8 is a member selected from alkyl, substituted alkyl, aryl and substituted aryl groups.

7. The compound according to claim 1, wherein the alkyl and the internally substituted alkyl groups are members selected from C_1-C_{20} saturated straight-chain, C_1-C_{20} saturated branched-chain, C_1-C_{20} unsaturated straight-chain, C_1-C_{20} unsaturated branched-chain alkyl and internally substituted alkyl groups.

8. The compound according to claim 7, wherein the alkyl and internally substituted alkyl groups are members selected from C_5-C_{10} saturated straight-chain, C_5-C_{10} saturated branched-chain, C_5-C_{10} unsaturated straight-chain, C_5-C_{10} unsaturated branched-chain alkyl and internally substituted alkyl groups.

9. A compound according to claim 1, wherein R^2 has the structure:



(III)

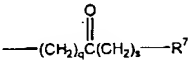
wherein,

R^7 a reactive functional group; and

n is a number from 1 to 20, inclusive.

10. The compound according to claim 9, wherein n is a number from 2 to 9, inclusive.

11. A compound according to claim 1, wherein R^2 has the structure:



(IV)

wherein,

R^7 is a reactive functional group; and

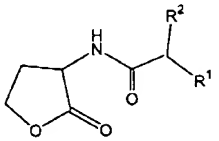
q and s are numbers independently selected from 1 to 20, inclusive.

12. The compound according to claim 11, wherein s is a number from 2 to 9, inclusive.

13. A pharmaceutical formulation comprising a pharmaceutically acceptable carrier and a compound according to claim 1, said reactive functional group of said compound being covalently bound to a biologically active agent.

14. The pharmaceutical formulation according to claim 13, wherein said biologically active agent is a member selected from antibiotics, immune stimulators and combinations thereof.

15. A compound having the structure:



(II)

wherein,

R^1 is a member selected from H, OH, and (=O); and

R^2 is a member selected from H, reactive functional groups, alkyl groups terminally substituted with a reactive functional group and internally substituted alkyl groups terminally substituted with a reactive functional

group, with the proviso that when R^2 is —OH, R^1 is a member selected from OH, and (=O).

16. The compound according to claim 15, wherein the reactive functional group is a member selected from $—OR^3$, $—NHR^4$, $—COR^5$, SH and CH_2X^3 wherein,

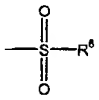
$—OR^3$ is a member selected from hydroxy, and a species such that $—OR^3$ is a leaving group;

R^4 is a member selected from H, C_1-C_6 alkyl, C_1-C_6 substituted alkyl, aryl and substituted aryl groups;

R^5 is a member selected from H, halogen and $—OR^6$, wherein R^6 is species such that $—OR^6$ is a leaving group; and

X^3 is a halogen.

17. The compound according to claim 16, wherein R^3 is



(V)

wherein,

R^8 is a member selected from alkyl, substituted alkyl, aryl and substituted aryl groups.

18. The compound according to claim 16, wherein R^6 is a member selected from alkyl, substituted alkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocyclyl and substituted heterocyclyl groups.

19. The compound according to claim 15, wherein the alkyl and the internally substituted alkyl groups are members selected from C_1-C_{20} saturated straight-chain, C_1-C_{20} saturated branched-chain, C_1-C_{20} unsaturated straight-chain, C_1-C_{20} unsaturated branched-chain alkyl and internally substituted alkyl groups.

20. The compound according to claim 19, wherein the alkyl and internally substituted alkyl groups are members selected from C_5-C_{10} saturated straight-chain, C_5-C_{10} saturated branched-chain, C_5-C_{10} unsaturated straight-chain, C_5-C_{10} unsaturated branched-chain alkyl and internally substituted alkyl groups.

21. A compound according to claim 15, wherein R^2 has the structure:

$$——(CH_2)_n——R^7 \qquad \text{(III)}$$

wherein,

R^7 is a reactive functional group; and

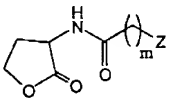
n is a number from 1 to 20, inclusive.

22. The compound according to claim 21, wherein n is a number from 2 to 9, inclusive.

23. The compound according to claim 15, wherein R^2 is a member selected from the group consisting of—COOH, —OH, —NH_2, and —SH.

24. The compound according to claim 21, wherein R^7 is a member selected from the group consisting of—COOH, —OH, —NH_2, and —SH.

25. A compound having a structure that is a member selected from:



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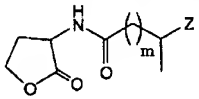

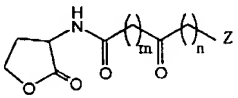

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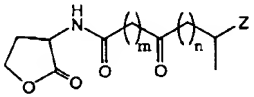

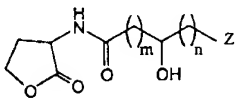

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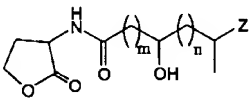

wherein,

m is a number selected from 1 to 20, inclusive;

n is a number from 0 to 20, inclusive; and

Z is a reactive functional group.

26. The compound according to claim 25, wherein m and n are numbers independently selected from 2 to 9, inclusive.

27. The compound according to claim 25, wherein Z is a member selected from —NH_2, —COOH, —SH, and —OH.